

REMARKS

Applicants acknowledge and appreciate the consideration of the previous arguments and withdrawal of the previous rejections of claims 1-12. Reexamination and reconsideration of the claims 1-9, 11 and 12 are respectfully requested. Claim 10 has been cancelled without prejudice herein.

Claims 1, 3-4, 6-7, and 9-12 were rejected under 35 U.S.C. sec. 102(b) applying U.S. Pat. No. 5,698,615 (the '615 patent). For a patent to be applicable under sec. 102(b), the patent must, *inter alia*, disclose each and every feature of the claimed invention.

Regarding claims 1, 3-4, and 6, it is respectfully submitted that the Office Action misinterpreted the '615 patent because it does not teach, disclose, or otherwise suggest each and every feature of independent claim 1. Specifically, the Office Action states that '615 patent discloses that "...the filling compound is applied in a liquid state; feeding the at least one optical waveguide into an extruder to form a slot element around the at least one optical waveguide (col. 16, lines 5-6)..." See pp. 2-3 of Office Action dated June 16, 2006. This is incorrect because the filling compound of the '615 patent is a powder before, during and after application, and not a liquid. See, the claims, specification and abstract of the '615 patent.

As reproduced below, the '615 patent states the following at Col. 16, ll. 2-10; rather than what is suggested by the Office Action:

The surface of the light waveguide is appropriately wetted by spraying or by application with a felt or sponge, and, subsequently, the actual filling compound FC can be applied by a fluidized bed before outer sheath SH is applied by extrusion. However, it is also possible to apply the filling mixture FC with electrostatic methods, whereby an appropriate charge is applied to the light waveguide (coating) composed of insulating material.

A fluidized bed is one common method of applying powders in a fiber optic cable. The fluidized bed uses pressurized gases, for instance, air as the fluid to enable the application of powders to fiber optic cables by allowing the powder to "float" within a chamber during the application (i.e., the air is used to circulate the powder for application). Illustratively, U.S. Pat. No. 4,401,366 (attached) discloses an example of a fluidized bed (reference characters 24 and 26 of Fig. 3) for applying a water-swellaable powder to a fiber optic cable. See Cols. 2-3, 11. 61-18 and Col. 5, 11. 27-64 of U.S. Pat. No. 4,401,366. Moreover, as depicted in U.S. Pat. No. 4,401,366, the cable is continuously run through the fluidized bed, thereby applying the powder along the entire length of the fiber optic cable. Thus, the objective evidence of record reflects that the '651 patent discloses a method for applying a powdered filling compound to the fiber optic cable.

As repeatedly discussed in the '651 patent the filling compounds is essentially a mixture of powders. For instance, the '615 patent states the following at Col. 8, 11. 33-47 regarding the filling compound applied to an electrical cable:

The interspaces or intersices are entirely or partially filled with a filling compound FS1 containing at least a swelling powder and an additive powder (for example, highly dispersed silicon dioxide).

Advantageously, an additive of oil or of an adhesive may also be provided so that the filling compound FS1 is prevented from giving off dust to the greatest possible extent. In addition, highly elastic microspheres, can be provided in the filling compound. A fine powder, particularly polyethylene powder, can be added as other filler material. In order to assure a better adhesion, the surfaces of the leads AD1 through AD4 can be additionally coated with an oil or adhesive material before the application of the filling compound FS1.

One of ordinary skill in the art would have understood that emitting dust is not a concern for liquids, but rather a problem

for materials such as fine powders. In other words, liquids do not emit dust. Additionally, it is respectfully submitted that there is no support in the text or Figures for the assertion that the '615 patent discloses applying a filling compound intermittently to the optical waveguide in a liquid state, then having the filling compound expand, thereby forming a plurality of dry, compressible element disposed about the optical waveguide. Instead, the '615 patent is directed cables having powdered filling compounds as discussed throughout the '615 patent.

Additionally, the Office Action states the '615 patent discloses "...applying a filling compound intermittently (col. 8, lines 62-63) to the at least one optical waveguide." See p. 2 of the Office Action dated June 16, 2006. This statement is incorrect. Instead, Col. 8, ll. 62-63 of the '615 patent states "[f]or this reason, the interstices is generally only partially filled." (emphasis added)

A continuous partial filling of interstices (partial filling of the space along the entire length of the fiber optic cable) is very different than intermittently filling interstices along the fiber optic cable. Simply stated, intermittent filling results in longitudinal spaces along the fiber optic cable where there is no filling material since no filling material is applied (i.e., intermittent application stops applying material), whereas a partial filling of the longitudinal space results in a continuous application of filling material along the entire length of the fiber optic cable. Moreover, a continuous application process such as a fluidized bed applies the powdered filling compound of the '615 patent along the entire length of the fiber optic cable. For at least these reasons, the withdrawal of the sec. 102(b) rejection of claims 1, 3-4, and 6 is warranted and respectfully requested.

Regarding the sec. 102(b) rejection of claims 7 and 9-12, it

is respectfully submitted that the '615 patent does not teach, disclose, or otherwise suggest each and every feature of amended independent claim 7. Moreover, the amendment of independent claim 7 is not an admission that the art of record teaches, discloses, or otherwise suggests the features of the claim.

Generally speaking, a portion of the powdered filling compound of the '615 patent is loosely contained within the fiber optic cable. In other words, because the filling compound of the '615 patent is a fine powder it can migrate within the fiber optic cable even if portions of the powder are adhered to the optical waveguide using an oil or the like. Simply stated, not all of the powder filling compound is adhered to the optical waveguide and cannot be anchored to both the optical waveguide and the tube as recited in claim 7. Second, as stated above the filling compound of the '615 patent is applied in a continuous process (e.g., fluidized bed) and is disposed along the entire length of the cable.

Third, the Office Action states that the limitation which recites "formed by material expanding within the interior space, where a defined contact pressure is applied by the filling elements against the slot element and against the at least one optical waveguide for anchoring them in longitudinal direction of the transmission element and where position changes of the at least one optical waveguide are possible" is a method of forming and not germane to the issue of patentability. See the p. 2 of the Office Action.

Applicants respectfully submit that it is beyond refute that portions of the limitation cited by the Office Action are directed to the structure of the optical transmission element and not related to the method of making the same, and, as such require consideration for patentability. For at least these reasons, the withdrawal of the sec. 102(b) rejection of claims 7, 9, 11 and 12 is warranted and respectfully requested.

Claims 2 and 8 were rejected under 35 U.S.C. sec. 103(a) applying the '615 patent in view of U.S. Pat. No. 4,504,298 (the '298 patent). To be applicable under sec. 103(a), the combination of teachings must, *inter alia*, expressly or inherently, teach, disclose, or otherwise suggest each and every feature of the claimed invention. Additionally, motivation and suggestion to combine the patents must be present.

For at least the reasons stated, the purported modification failed to make a *prima facie* case with respect to claims 2 and 8.

As an independent basis, the '298 patent is directed to a process for making a infrared light transmitting optical fiber by drawing a rod of single crystal or polycrystalline metal halide into a fiber through a die. See Col. 2, ll. 40-43 of the '298 patent. Drawing an infrared light transmitting optical fiber from a rod of single crystal or polycrystalline metal halide through a die is totally unrelated to the composition for a filling compound of a fiber optic cable. By way of example, the '615 patent states the following at Col. 4, ll. 39-44 regarding the use of oil in the filling compound:

This object is achieved in that the filling compound comprises an additive in the form of oil or an adhesive whose part in the filling compound is selected so low that the filling compound is prevented from giving off dust during processing and without the formation of a paste-like consistency of the filling compound.

On the other hand, the '298 patent uses a lubricant for decreasing the drawing force of the rod as stated at Col. 3, ll. 12-29 as reproduced below:

To decrease the drawing force and facilitate the drawing operation, a lubricant that decreases the friction coefficient is preferably supplied throughout the drawing. The lubricant can be supplied in the same manner as in the case of drawing a copper or aluminum wire, for example, by dropping a liquid lubricant to the metal halide fiber before passing through a die or dipping the die in a liquid lubricant thereby supplying the lubricant to metal halide fiber during the drawing.

Liquid lubricants, for example, mineral oils such as spindle oil, turbine oil and silicone oil, as well as fatty oils such as castor oils, palm oil, and whale oil are preferably used. Since the metal halide crystal being drawn is relatively soft, the presence of metal powders or other solid dusts in lubricants will damage the fiber or permit the dusts to be buried in the fiber. Therefore, a filtered lubricant or a high-purity lubricant is desirably used.

Thus, the '615 patent and the '298 patent are directed to completely different subjects and solve two completely different problems. Consequently, one of ordinary skill in the art would not be motivated, nor take the suggestion to make the purported modification. At most, the '298 patent would teach the skilled artisan how to draw an infrared light transmitting optical fiber from a rod of single crystal or polycrystalline metal halide for downstream use in a fiber optic cable. For at least the reasons stated, the withdrawal of the sec. 103(a) rejection of claims 2 and 8 is warranted and respectfully requested.

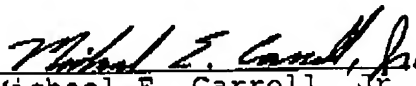
Claim 5 was rejected under 35 U.S.C. sec. 103(a) applying the '615 patent without a teaching reference. To be applicable under sec. 103(a), a single reference must, *inter alia*, expressly or inherently, teach, disclose, or otherwise suggest each and every feature of the claimed invention. For at least the reasons stated above with respect to claim 1, the rejection failed to make a *prima facie* case with respect to claim 5.

No fees are believed due in connection with this Reply. If any fees are due in connection with this Reply, please charge any fees, or credit any overpayment, to Deposit Account Number 19-2167.

Allowance of all pending claims is believed to be warranted and is respectfully requested.

The Examiner is welcomed to telephone the undersigned to discuss the merits of this patent application.

Respectfully submitted,

  
Michael E. Carroll, Jr.  
Attorney  
Reg. No. 46,602  
P.O. Box 489  
Hickory, N. C. 28603  
Telephone: 828/901-6725

Date: August 10, 2006

BEST AVAILABLE COPY